



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460**

**OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD**

November 29, 2006

EPA-COUNCIL-07-001

Honorable Stephen L. Johnson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Subject: Benefits and Costs of Clean Air Act – Air Quality Modeling Issues

Dear Administrator Johnson:

EPA's Office of Air and Radiation is developing the Agency's "Benefits and Costs of the Clean Air Act 1990 - 2020: EPA's Second Prospective Analysis" (hereinafter Second Prospective Study) pursuant to Section 812 of the Clean Air Act Amendments calling on EPA to conduct periodic, scientifically reviewed studies to assess the benefits and the costs of the entire Clean Air Act. The overall purpose of this Second Prospective Study is to estimate the net health, welfare, ecological and economic benefits of the 1990 Clean Air Act Amendment programs. As part of this effort, OAR has recently submitted to the Advisory Council on Clean Air Compliance Analysis (Council) and its Air Quality Modeling Subcommittee (AQMS) its draft emissions report, as well as materials describing its emissions inventories and its selection of air quality models for the particulate matter and ozone analyses in the Second Prospective Study. In July 2006, OAR requested input from the Council and AQMS on these draft products.

On August 7, 2006, the AQMS teleconferenced to discuss the OAR's charge questions related to these air quality modeling issues. The Council and AQMS generally endorsed the Project 812 Team's choices.

With respect to OAR's draft emissions report and emissions inventories, the Council and AQMS generally agreed that the Project 812 Team's data and methodological choices were sound. The Council and AQMS support the Team's technical choices for the base year inventory, source of data and method for dealing with non-road equipment. With respect to OAR's method for estimating the need for local controls to meet ozone and PM NAAQS in the future, the Council and AQMS agreed that the Team's method was the most reasonable approach, but suggested the Team clarify its assumptions more precisely, such as when its

forecasts required unidentified measures. Moreover, the Council and AQMS cautioned that any assumptions about costs should be drawn from the realm of observed practices.

With respect to OAR's model choices, the Council and AQMS support the 812 Project Team's choice of the Community Multiscale Air Quality (CMAQ) modeling system (Version 4.5) for modeling particulate matter and ozone. Also deemed appropriate was the Team's choice of the Comprehensive Air Quality Model with Extensions (CAMx) as part of its metamodeling approach to aggregate numerous individual air quality modeling simulations into a multi-dimensional air quality "response surface" for ozone.

While the Council and AQMS generally endorsed the Project 812 Team's choices, it is important to underscore the context of analytic decisions for the Second Prospective Study which can sometimes afford a greater license than would be appropriate in other contexts. The objective of the Second Prospective Study is to estimate the difference in net benefits between implementing the regulations issued under the Clean Air Act Amendments of 1990 (the "with CAAA" case) and not having those regulations (the "without CAAA" case). In this context, a number of technical choices were deemed acceptable in that they would not significantly affect the difference between these two scenarios. An example is the Project Team's assumption about 30 year average temperatures. For other types of analyses, it would be more prudent to align 30 year temperature trends with the latest scientific projections incorporating the effect of greenhouse gases. However, for the Second Prospective Study, this adjustment is less crucial because it would have only a very small effect on the difference between the two scenarios. It is important to bear this caution in mind when using the Second Prospective Study as a model for future EPA analyses.

Detailed recommendations are included in the meeting minutes of the August 7 teleconference posted on the SAB web site. On behalf of the entire Council and the Air Quality Modeling Subcommittee, we appreciate this opportunity to provide timely advice to the Agency. We hope these comments are helpful to the Office of Air as it proceeds with this important work.

Sincerely,

/Signed/

Dr. Trudy Cameron, Chair
Advisory Council on Clean Air
Compliance Analysis

/Signed/

Dr. David T. Allen, Chair
Air Quality Modeling Subcommittee
Advisory Council on Clean Air
Compliance Analysis